

REMARKS

The claims are claims 1 to 4, 7, 8 and 21.

Claims 1, 3, 8 and 21 are amended. Claim 20 is newly canceled. Claim 1 is amended to more clearly recite subject matter taught in the original application. Claim 3 is amended to correspond to amendments to base claim 1 and to more particularly recite the stationary modes. Claims 8 and 20 are amended into independent form.

The specification is objected to and claim 1 is objected to because the specification failed to provide proper antecedent basis for the subject matter of claim 1.

Claim 1 is properly described in the original application. As currently amended claim 1 recites "a second unit affixed to said speaker cone effecting relative motion between said first unit and said second movement through motion of said speaker cone." The application states at page 6, lines 20 to 26:

"Electromagnetic coil structure 62 is affixed to cone 43 at the rear of cone 43. Representative strut 45 is indicated in phantom in FIG. 1 to avoid cluttering illustration of sensor apparatus 60. Electromagnetic coil structure 62 is preferably affixed with cone 42 using a wedge 68. Wedge 68 is preferably configured appropriately to cause electromagnetic coil 60 to respond to motion by cone 43 in directions substantially parallel with axis 22. Wedge 68 may be eliminated or altered from the described preferred configuration in mounting electromagnetic coil structure 62."

This disclosure of the original application clearly states that electromagnetic coil structure 62 is affixed to the rear of cone 43 and that wedge 68 is optional and preferred. This corresponds to language in claim 1 that the second unit is "affixed to said speaker cone." This application states at page 7, lines 3 to 6:

"Motion of cone 43 effects relative motion between electromagnetic coil structure 62 and ferrous core structure 64."

This corresponds to language in claim 1 reciting "effecting relative motion between said first unit and said second movement through motion of said speaker cone." Thus claim 1 recites language substantially as presented in the original specification. Accordingly, these limitations of claim 1 are proper.

Claims 1 to 4 were rejected under 35 U.S.C. 103(a) as made obvious by the combination of Pulfrey U.S. Patent No. 5,493,620 and Saik et al U.S. Patent No. 4,312,118.

Claim 1 recites subject matter not made obvious by the combination of Pulfrey and Saik et al. Claim 1 recites the sensor device is mounted at "a position on said cone radially offset from said axis." Claim 1 earlier recites "a voice coil aligned with the speaker cone along an axis." This makes clear that the axis is the joint axis of the voice coil and speaker cone. The OFFICE ACTION cites: velocity sensing structure 40 of Pulfrey as making obvious the recited variable reluctance sensor device; annular cylindrical permanent magnet 28 of Pulfrey as making obvious the recited first unit; and voice coil 30 of Pulfrey as making obvious the second unit offset from the axis. Inspection of Figures 1 and 2 of Pulfrey makes clear that velocity sensing structure 40, annular cylindrical permanent magnet 28 and voice coil 30 are coaxial with cone 21. The OFFICE ACTION cites Pulfrey at column 5, lines 5 to 20 as making obvious this limitation. This portion of Pulfrey states:

"The loudspeaker structure 20 includes a cone 21, a frame or basket 22, webs 23 and 24 and a main electromagnetic structure 25. The main electromagnetic structure 25 includes a rear cylindrical iron pole piece 26, an annular cylindrical permanent magnet 27, an inner annular cylindrical iron pole piece 28 and a thin voice coil nonconductive, nonmagnetic

support or bobbin 29. A voice coil 30 is fixedly positioned on the bobbin 29. A front annular cylindrical iron pole piece 32 is positioned about the voice coil 30 and spaced radially therefrom. The voice coil 30 is positioned in the air gap defined between the inner annular pole piece 28 and the front cylindrical pole piece 32, the longitudinal extent of the voice coil 30 is such that the same number of turns is always within the air gap, even at maximum deflections in either direction, a configuration usually referred to as 'overhang'."

The only teaching of remotely resembling the "radially offset" recited in claim 1 is "A front annular cylindrical iron pole piece 32 is positioned about the voice coil 30 and spaced radially therefrom." The Applicants respectfully submit that one skilled in the art viewing Pulfrey would understand front annular cylindrical iron pole piece 32 is coaxial with voice coil 30 and cone 21. The OFFICE ACTION cites voice coil 30 as making obvious the second unit recited in claim 1. Voice coil 30 clearly cannot have an axis radially spaced offset from its own axis are required by the language of claim 1. Thus Pulfrey fails to make obvious the "position on said cone radially offset from said axis" limitation. Accordingly, claim 1 is allowable over the combination of Pulfrey and Saik et al.

Claim 3 recites subject matter not made obvious by the combination of Pulfrey and Saik et al. Claim 3 recites the second unit is affixed to the speaker cone "at a substantially stationary node of any modal vibration of said speaker cone." The OFFICIAL ACTION cites no additional portions of Pulfrey or Saik et al as making this limitation obvious. Thus the OFFICIAL ACTION presents no evidence of obviousness of claim 3. Accordingly, claim 3 is allowable over the combination of Pulfrey and Saik et al.

Claim 4 recites subject matter not made obvious by the combination of Pulfrey and Saik et al. Claim 4 recites "said second unit is mounted on said cone using a wedge." The OFFICIAL ACTION states the Pulfrey as modified by Saik et al with OFFICIAL

NOTICE that wedges are known in the art. The Applicants dispute that wedges such as recited in claim 4 were well known in the art. Accordingly, the Applicants request citation of a reference to support this rejection. In the absence of citation to a reference teaching the claimed wedge, the rejection does not make a prima facia case of unobviousness because it presents no evidence. Accordingly claim 4 is not made obvious by the combination of Pulfrey and Saik et al.

Claims 2 and 7 are allowable by dependence upon allowable claim 1.

Paragraph 2 of the OFFICIAL ACTION stated that claims 8 and 21 would be allowable if rewritten independent of rejected base claims. Claims 8 and 21 have been amended into independent form incorporating all limitations of their base claims and intermediate claims. Accordingly claims 8 and 21 are allowable.

The Applicants respectfully submit that all the present claims are allowable for the reasons set forth above. Therefore early reconsideration and advance to issue are respectfully requested.

If the Examiner has any questions or other correspondence regarding this application, Applicants request that the Examiner contact Applicants' attorney at the below listed telephone number and address to facilitate prosecution.

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Respectfully submitted,

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